

Work Order ID 50802

July 22, 2009 2:56:49 PM

Page 1

Item ID: D212-664-207

Accept

Setup Start

Revision ID: A

Stop

Item Name: Crosstube Low Standard Aft

Start Date: 07/23/2009 Start Qty: 1.00

Cust Item ID:

Required Date: 07/31/2009 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: *mf*

Date: 09-07-22 Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D212-664-247

Rev A

100

0.00



DC

Document Control

DOCUMENT CONTROL

Memo

Photocopy bluefile and create labels as per PPP D212-664-207 CHG001

Handwritten: 9/8/27 @ SP

110

0.00



Packaging

Packaging

Packaging

Memo

0.00

Handwritten: 9/8/27 @ SP

120

0.00



CNC Bend 2

CNC Alpha 160 Bender

BENDING MACHINE - CROSSTUBES

Memo

0.00

Bend tube as per Dwg D212-664-247 using CNC bender program and Folio FT

Handwritten: MB 09-08-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 50802

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Start Date: 07/23/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 07/31/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

QC15- Crosstube Dimensional Check

0.00

=> 508/08/11



QC

Memo

0.00

Quality Control

140

Crosstubes

0.00



49/8/12

Crosstubes

Memo

0.00

Crosstubes

1-Drill Rivet holes as per Dwg D212-664-247 using DT8972. 12-Drill pilot holes in tube as per Dwg D212-664-247 using DT8550 and DT8551. 13-Ream hole to finish size in tube as per Dwg D212-664-247. 14-Deburr & Inspect for surface damage. Repair damage within 1

- AWM 9-8-12

150

Crosstubes Chemical Conversion

0.00

HandFXtube

Memo

0.00

Hand Finishing Crosstubes

Chemical Conversion Coat Tube & Cuffs

1 - AWM 9-8-12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Required Date: 07/31/2009 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: Date:

Tooling: Date:

Run Start



QC: Date:

SPC (Y/N): Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

QC3- Inspect Part Finish

0.00

=) 809/08/14

QC

QC

QC

Memo

0.00

Quality Control

170

QC5- Inspect part completeness to step on W/O

0.00

=) 809/08/14

QC

QC

QC

Memo

0.00

Quality Control

180

Outsource process - NDT per QSI038 4.1

0.00



Outsource2

Memo

0.00

QC 09/08/14

①

Outsource process - NDT

Liquid Penetrant Inspection as per QSI 038 Issue P/O: 10220 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order

W/O:		WORK ORDER CHANGES					
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QA: N/C Closed: _____ Date: _____

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Stop



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Start Date: 07/23/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 07/31/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190		0.00							
	Packaging								
Packaging	Memo	0.00							
Packaging	Ensure copy of NDT results attached to work order.								
200		0.00							
	QC5- Inspect part completeness to step on W/O								
QC	Memo	0.00							
Quality Control	Inspect for damage & ensure results are as per Dwg D412-664-203								
210		0.00							
	Crosstubes								
Crosstubes	Memo	0.00							
Crosstubes	1-Rivet Cuffs as per Dwg D212-664-247. with Sika flex in Between tube & Cuff I A/R SIKAFLEX -241/-291 BATCH: <u>112391</u>								

12/8/18

09 08 19

09 08 18

W/O:		WORK ORDER CHANGES					
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Cust Item ID:

Required Date: 07/31/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

220

0.00



SprayPaint

SprayPaint

Memo

0.00

Spray Painting

1-Prime inside and outside crosstube as per QSI 005 4.2 2-Paint outside crosstube with White Imron as per QSI 005 4.2 [PRIME:]Start Time: 10:00 [Finish Time: 11:30] PAINT: [Start Time: 3:00 [Finish Time: 4:00]

2T 09-08-19

2T 07-08-24

230

0.00



QC14- Inspect Spray Paint

QC

Memo

0.00

Quality Control

Wrap in plastic bag to protect from scratches

ml 09 08 20 (1) *05-08-25*

240

0.00



Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1- Assemble as per Dwg D212-664-247 12- Lightly scuff the bonded area using a 320 grit sand paper and clean the area with 41058 wash 'n' wipe 13- Instal support with magnobond 6398 per dwg D212-664-247, 14- cure for 12hrs before packaging. [Time & date of appli

ml 09 08 20 (1)

B111249 exp. 02/2010

Time: 345

Torque: *ml* 09-08-27

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

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Item Name: Crosstube Low Standard Aft

Start Date: 07/23/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 07/31/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

250

QC5- Inspect part completeness to step on W/O

0.00

=> 501/04/27

②

✗

PTD →



QC

Memo

0.00

Quality Control

260

QC4- 100% Inspect kits for completeness

0.00

=> 502/04/27

②

✗



QC

Memo

0.00

Quality Control

270

Packaging

0.00

2ea A

9/8/27 ② SP



Packaging

Memo

0.00


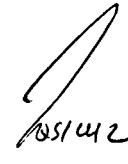

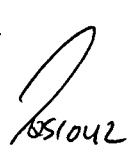
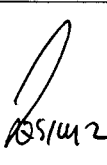
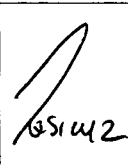
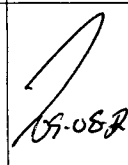
Packaging

Identify and pack for shipping as per PPP D212-664-207

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: pa12-664-207 PAR #: N/A Fault Category: close to be NCR: (Yes) No DQA: AS Date: 09-08-27
Re-work / Re-work QA: N/C Closed: AS Date: 09-08-28

NCR: 50802		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
9/6/21	# 240	Durking inspection it was found that the x-tube was assembled to 14mm between the supports. Dig. ask for 24mm 28.00" tubes measure 27.375".		Remove all supports and all old magnabond from x-tube and support. Re assemble as per 12-24 D212-664-247	BT 09-08-24 BT 09-08-25	BT 09-08-24 S 09/08/27		S 09/08/21
		28.00" tubes measure 27.375". R.C. employee was under the impression the tube were 24" due to a DEO that was attached		Re paint center section as per Scuff area lightly and Re paint center section as per Q27005	BT 09-08-24	BT 09-08-24		S 09/08/21
		R.C. Human error. LOA to dig detail.		w/ imrn. i supports as necessary See W/O 50804 for additional 240 comment info. for 107: -107B	BT 09-08-25 MM 09-08-27	S 09/08/27		

NOTE: Date & initial all entries

Work Order ID 50802

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Item ID: D212-664-207

Accept



Setup Start



Revision ID: A

Stop



Item Name: Crosstube Low Standard Aft

Start Date: 07/23/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 07/31/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: Date:

Tooling: Date:

Stop



QC: Date:

SPC (Y/N): Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/08/27 *[Signature]*

C209/08/27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

July 22, 2009 2:56:48 PM

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Work Order ID: 50802

Parent Item: D212-664-207RevA

Parent Item Name: Crosstube Low Standard Aft


Start Date: 07/23/2009

Required Date: 07/31/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3428-1RevA		Manufactured	No			100	Each	18.0000	1.0000			
												
Placard												

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST 18

47310 8

48359 10

D212-664-207TRNRevA Manufactured No

140 Each 0.0000 1.0000



Crosstube Turning Detail

D3660-1RevB Manufactured No

220 Each 10.0000 2.0000



CUFF

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST 10

44455 4

46705 6

50790 SU

B50671
DP9-8-11

②

✓
K 9/3/02

B 51162

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

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Picklist Print

July 22, 2009 2:56:48 PM

Work Order ID: 50802

Parent Item: D212-664-207RevA

Parent Item Name: Crosstube Low Standard Aft

Start Date: 07/23/2009

Required Date: 07/31/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

CR3212-4-06

Purchased

No

240

Each

346.0000

44.0000



CHERRY RIVET

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

346

107534

346

D2940-1RevB

Manufactured

No

240

Each

74.0000

2.0000



Support

ml 08 19

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

74

24367

4

25594

2

41536

10

41870

20

45203

18

47748

20

ST 09-08-20

x2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

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Page 3

Work Order ID: 50802

Parent Item: D212-664-207RevA

Parent Item Name: Crosstube Low Standard Aft


Comments:

Start Date: 07/23/2009

Required Date: 07/31/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3595-063-530RevA		Manufactured	No			240	Each	162.0000	4.0000			
 RUBBER CUSHION												

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST 162

40780 2

44998 48

50030 112

ST 09-08-20

44

AN6-40A

Purchased

No

260

Each

31.0000

4.0000

Bolt

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST 31

111424 31

112314

SC

AN6-41A

Purchased

No

260

Each

67.0000

2.0000

Bolt

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST 67

109371 17

111605 50

111605

SC

9/18/27 (2)

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Shop Packet Print

Page 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Comments:

Start Date: 07/23/2009

Required Date: 07/31/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN960JD616		Purchased	No			260	Each	398.0000	18.0000			



Washer

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	398
107242	3
107959	6
109371	8
110704	23
111193	18
111607	340

11234

SP

MS21042L6

Purchased

No

260

Each

779.0000

6.0000



Nut

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	779
105077	22
110002	257
111548	100
111578	400

110002

(K) SP

9/8/27

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Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Parent Item Name: Crosstube Low Standard Aft

Start Date: 07/23/2009

Required Date: 07/31/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MS21920-28		Purchased	No			260	Each	150.0000	4.0000			



Clamp(per MIL-DTL-8783C)

Warehouse
Location

Loc Qty

Loc Code

ST 09 -08 20

OFFSHORE

FG

5

105884

5

Main Warehouse

ST

145

106864

5

108466

9

108847

7

109181

14

109965

10

111281

50

111734

50

x4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

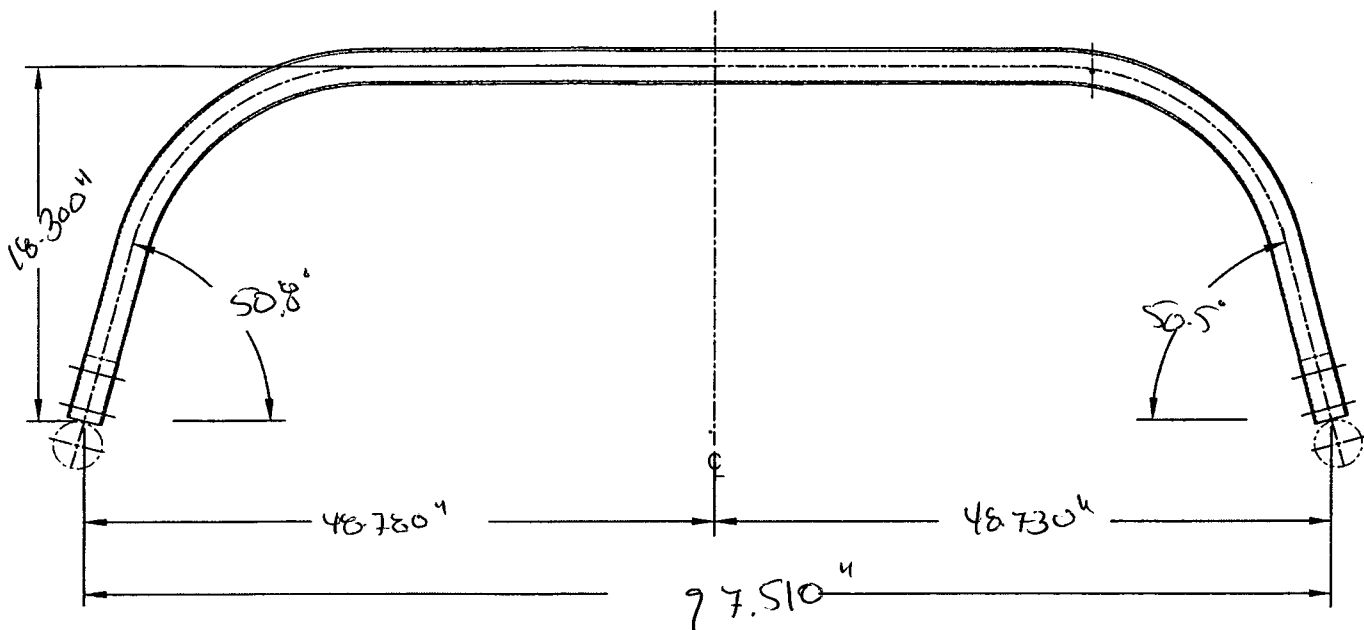
QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order: 50802	
Description: Crosstube Low Aft (205/212)	Part Number: D212-664-207	
Inspection Dwg: D212-664-247 Rev: A		Page 1 of 1

Required Dimension	Min	Max
Height	18.16	18.42
1/2 Span	48.55	48.81
Angle	49	52
Total Span	97.1	97.62



Comments

QC15 Inspection	S
Date	07/08/17

Rev	Date	Change	Revised by	Approved
A	08.02.29	New Issue	KJ/JM	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

PARTS LIST:

Qty	Part Number	Description
X	D212-664-247	CROSSTUBE ASSEMBLY (205/212 LOW AFT)
1	D6008-132	CROSSTUBE
2	D2940-1	SUPPORT
4	D3595-063-530	RUBBER CUSHION
2	D3660-1	CUFF
4	MS21920-28	CLAMP (OR MS21920-30)
44	CR3212-4-06	RIVET (OR M7885/3-4-06)
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
A/R	SIKAFLEX-241/-291	SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT)

GENERAL NOTES:

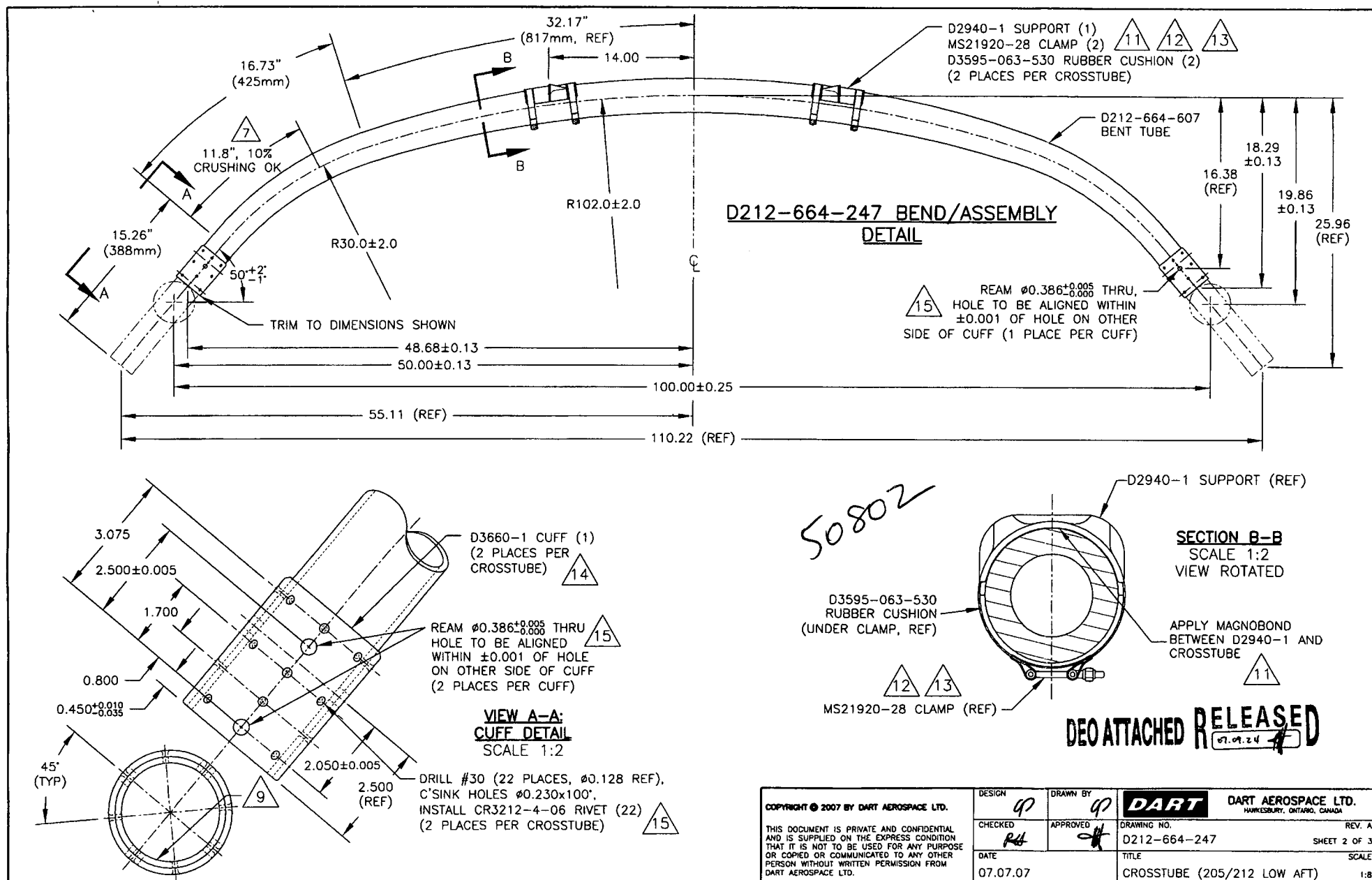
- 1) MATERIAL: MANUFACTURED FROM D6008-132
FINISHED LENGTH = 128.27±0.020 (BEFORE BENDING/TRIMMING)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) PART IS SYMMETRIC ABOUT CENTERLINE.
- 6) WHEN MACHINING TAPER, RUN-OFF PART AT STOCK. BLEND OUT EDGE LONGITUDINALLY.
TRANSITION SHOULD BE SMOOTH.
- 7) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- 8) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 9) SCRIBE DART PART NUMBER AND BATCH NUMBER ON INNER SURFACE OF TUBE WITH A
VIBRATING STYLUS.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2940-1
THAT WILL BE IN CONTACT WITH THE CROSSTUBE. LET CURE FOR 12 HOURS AFTER
INSTALLATION AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE
D2940-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE
CROSSTUBE SUPPORT.
- 13) TORQUE CLAMPS 80 TO 100 IN.-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY
AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 14) INSTALL D3660-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A
LAYER OF SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN
CUFF AND CROSSTUBE. SEAL EDGE OF CUFF TO ENSURE NO GAPS.
- 15) TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

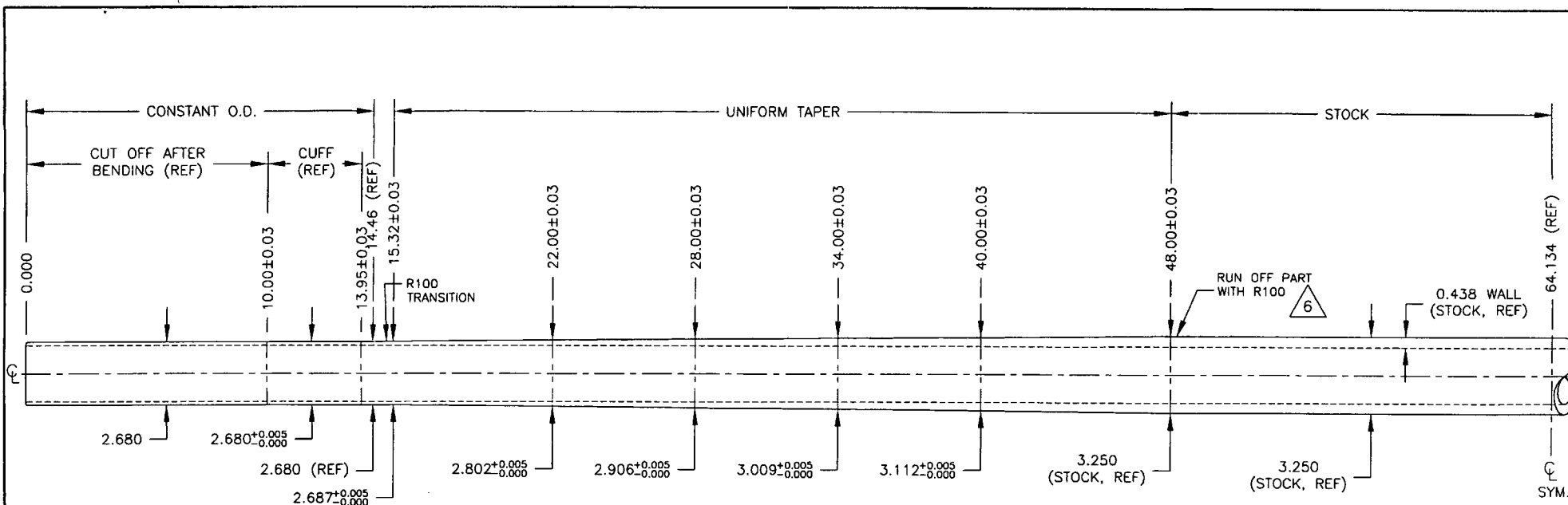
50802.
mf
09-07-22

DEO ATTACHED
RELEASED
09.24 #

A		07.07.07	NEW ISSUE
DESIGN <i>qp</i>		DRAWN BY <i>qp</i>	DART DART AEROSPACE LTD. WARRICKSBURY, ONTARIO, CANADA
CHECKED <i>ph</i>		APPROVED <i>h</i>	DRAWING NO. REV. A D212-664-247 SHEET 1 OF 3
DATE 07.07.07		TITLE SCALE CROSSTUBE (205/212 LOW AFT) NTS	

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D212-664-247 MACHINING DETAIL

RELEASED
07-02-24
DEO ATTACHED

50802

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THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.		CHECKED 9P	APPROVED 9P	
DATE 07.07.07		TITLE CROSSTUBE (205/212 LOW AFT)		
		REV. A SHEET 3 OF 3 SCALE 1:4		

DRAWING NO. D212-664-247	TITLE CROSSTUBE	REV. A	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D212-664-247-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN UP	CHECKED RY	MFG. APPR. AA	APPROVED AM	DE APPR. H			
DATE 09.05.01	DATE 09.06.15	DATE 09/06/22	DATE 09/06/22	DATE 09.06.22			

CHANGE:

ADD THE FOLLOWING CROSSTUBE ASSEMBLY:

Part Number	Description
D212-664-247B	CROSSTUBE ASSEMBLY (214 LOW AFT)

THE D212-664-247B CROSSTUBE HAS THE SAME PARTS LIST AS THE D212-664-247 CROSSTUBE. HOWEVER, INSTALL THE SUPPORTS AS SHOWN IN FIGURE 1 OF THIS ENGINEERING ORDER. THE NEW KIT IS OTHERWISE ASSEMBLED PER THE D212-664-247 CROSSTUBE.

RELEASED
09/06/22

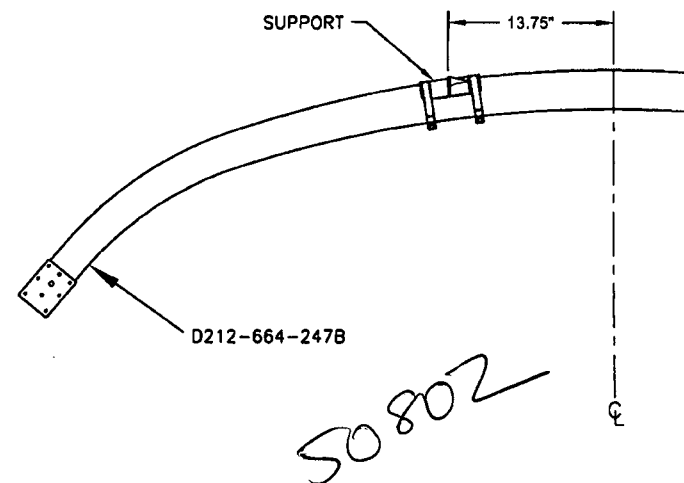


FIGURE 1 - SUPPORT INSTALLATION



LIQUID PENETRANT TEST REPORT

P- 14947

CLIENT	<u>DART Aerospace</u>	DATE	<u>Aug 18-2009</u>	PAGE	<u>1</u> OF <u>1</u>
ATTENTION	<u>LINDA / CHANTAL</u>	ACUREN JOB NO.	<u>188-09-001487</u>	TIME	AM <input checked="" type="checkbox"/> PM <input type="checkbox"/>
ADDRESS	<u>1270 ABERDEEN ST.</u>	PO/NO.	<u>10220</u>		
	<u>HAWKES BURY ON K6H 1K7</u>	WORK LOCATION	<u>HAWKES BURY SHOP</u>		
PROJECT	<u>F.P.I. ON MACHINED PARTS AND CROSS TUBES</u>	ACCEPTANCE STD.	<u>ASTM 1417</u>	REV./DATE	<u>2007</u>
ITEM(S) EXAMINED	<u>34 ITEMS</u>				

JOB DESCRIPTION	PROCEDURE NO. <u>LT-1002</u> REV./DATE	TECHNIQUE NO. <u>LT-1002</u> REV./DATE
PART NO.	MATERIAL <u>STAINLESS STEEL</u> THICKNESS <u>ALUMINE ALUMINUM</u>	
SCOPE	<u>WET FLOURESCENT LIQUID PENETRANT INSPECTION CARRIED OUT</u> <u>100% EXTERNAL</u>	

TEST DETAILS	
METHOD <input checked="" type="checkbox"/> FLUORESCENT <input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH <input type="checkbox"/> SOLVENT REMOVABLE <input type="checkbox"/> POST EMULSIFIED
FAMILY BRAND <u>MAGNAFLUX</u>	BLACK LIGHT S/N <u>16454</u> <input type="checkbox"/> OUTPUT > 1000 μ W/cm ² <input type="checkbox"/> AMBIENT < 2 fc
PENETRANT <u>2L67</u> MINIMUM DWELL TIME <u>45</u> MIN.	LIGHTING EQUIP. <input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT <input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER <u>H2O</u> MINIMUM DRY TIME <u>>10</u> MIN.	OTHER <u>LABINO</u>
DEVELOPER <u>SKD 52</u> MINIMUM DWELL TIME <u>10</u> MIN.	LIGHT METER S/N
DEVELOPER TYPE <input checked="" type="checkbox"/> NON AQUEOUS <input type="checkbox"/> AQUEOUS <input type="checkbox"/> DRY	CAL DUE DATE <u>DEC. 8-2009</u>

TEST SURFACE	
SURFACE CONDITION <input type="checkbox"/> AS GROUND <input type="checkbox"/> AS WELDED <input type="checkbox"/> MACHINED <input type="checkbox"/> SHOT BLASTED <input type="checkbox"/> CLEAN BARE METAL	
SURFACE TEMPERATURE <input type="checkbox"/> < -4°C/ 20°F <input type="checkbox"/> -4°C/ 20°F TO 10°C/50°F <input type="checkbox"/> 10°C/50°F TO 52°C/125°F <input type="checkbox"/> > 52°C/125°F	

RESULTS- <input type="checkbox"/> METRIC <input type="checkbox"/> IMPERIAL			
ITEM	COMMENTS	ACCEPT	REJECT
1-	CROSS TUBE .W.O. 50803	✓	
1-	CROSS TUBE .W.O. 50802	✓	
1-	CROSS TUBE .W.O. 51082	✓	
1-	CROSS TUBE .W.O. 51081	✓	
1-	CROSS TUBE .W.O. 51080	✓	
1-	CROSS TUBE .W.O. 50804	✓	
1-	CROSS TUBE .W.O. 50981	✓	
1-	CROSS TUBE .W.O. 50980	✓	
7	STUDS .W.O. 50931	✓	
16-	STUDS .W.O. 50936	✓	

ALL PARTS EXAMINED ON THIS
REPORT HAVE BEEN FOUND
ACCEPTABLE TO STD.

MM/ 09 08 19

Scope of Services
The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care
In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES	
CLIENT REPRESENTATIVE <u>MATT MURDOCH</u>	DTR # <u>E-20071</u>
TECHNICIAN (SIGNATURE): <u>M. Keith Johnston</u>	REPORT REVIEWED BY:
NAME (PRINT): <u>M. Keith Johnston</u>	NAME INITIALS
CGSB LEVEL <u>1</u> SNT LEVEL <u>6066</u>	CGSB LEVEL SNT LEVEL
CGSB REG. No	CGSB REG. No